

FOR PUBLICATION

UNITED STATES COURT OF APPEALS

FOR THE NINTH CIRCUIT

JOE KENNEDY, as successor in
interest and a personal
representative of the Estate of
Ellen Marie Kennedy; SHAWN
KENNEDY; ERIC KENNEDY;
SHANNON KENNEDY, by and
through her parent and

guardian Joe Kennedy; and

CHAD KENNEDY, by and

through his parent and
guardian Joe Kennedy,

Plaintiffs-Appellants,

v.

SOUTHERN CALIFORNIA EDISON
COMPANY; COMBUSTION
ENGINEERING, INC.,
Defendants-Appellees.

Appeal from the United States District Court
for the Southern District of California
Napoleon A. Jones, District Judge, Presiding

Argued and Submitted
February 10, 2000--Pasadena, California

Filed July 20, 2000

Before: Robert Boochever, Michael Daly Hawkins, and
Sidney R. Thomas, Circuit Judges.

Opinion by Judge Hawkins

No. 98-56157

D.C. No.

CV-95-03769-NAJ/RBB

OPINION

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COUNSEL

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OPINION

HAWKINS, Circuit Judge:

This appeal requires us to examine California tort and products liability law as made specifically applicable to actions in federal court for claims of injury arising out of nuclear power plant incidents. Specifically, we must decide whether the district court erred in (1) refusing to give a jury instruction under Rutherford v. Owens-Illinois, Inc., 941 P.2d 1203 (Cal. 1997), in a case involving a single defendant who raises alternative possible sources of the injury as a defense; and (2) dismissing claims under California products liability law. For the reasons set forth below, we reverse and remand the case for a new trial.

BACKGROUND

Ellen Kennedy died in 1996 of chronic myelogenous leukemia ("CML"), a rare form of cancer. She was 43 years old.

The plaintiffs/appellants are her husband, Joe, and their four children (collectively referred to as "Kennedy"). From 1982 to 1990, Mr. Kennedy worked as machinist for Southern California Edison Company ("Cal Edison") at the company's San Onofre Nuclear Generating Station ("SONGS").

The plaintiffs sued Cal Edison in federal court, asserting jurisdiction pursuant to the Price-Anderson Act, 42 U.S.C. § 2011 *et seq.*, and seeking damages for Ellen Kennedy's wrongful death. The action alleged that her terminal CML resulted from negligence on the part of Cal Edison that resulted in her exposure to radiation from SONGS. Additionally, Kennedy sued Combustion Engineering, Inc., under a products liability cause of action, for the alleged faulty production of nuclear fuel rods. The theory of the case was that Joe Kennedy inadvertently brought home microscopic particles of radioactive material, known as "fuel fleas," from the power plant on his clothing, hair, tools, etc. These fuel fleas,

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which according to Kennedy contained radiation dosages in excess of the maximum allowable by federal regulations, came in contact with Mrs. Kennedy and caused her fatal cancer.

On March 20, 1997, the district court granted Combustion Engineering's motion to dismiss all the products liability claims against it. The court reasoned that, inasmuch as Mrs. Kennedy was not a user or consumer of the nuclear fuel rods Combustion Engineering produced, Combustion Engineering could not have reasonably foreseen that Mrs. Kennedy would be injured by its product.

Kennedy initially sought a burden-shifting order stating that once Kennedy made an initial showing of Mrs. Kennedy's exposure to radiation from SONGS, Cal Edison and Combustion Engineering would then bear the burden of proving their conduct was not a substantial factor in causing Mrs. Kennedy's death. On April 2, 1997, the district court denied this request.

In August 1997, the California Supreme Court issued its opinion in Rutherford, a products liability action brought by the estate of a worker who had been exposed to asbestos-containing products and subsequently died of lung cancer. The case, discussed infra, dealt in large part with the proper

jury instructions to be given on causation when multiple potential causes of the injury exist. In light of the decision, Kennedy requested a causation instruction "consistent with Rutherford." On November 14, 1997, the district court denied Kennedy's request. Kennedy requested a Rutherford instruction and submitted a proposal twice more before trial. Both requests were again denied.

On March 6, 1998, after a fact-intensive, five-week trial, the jury returned a unanimous verdict in favor of Cal Edison and Combustion Engineering. On June 9, 1998, the district

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court denied Kennedy's motion for a new trial. This appeal followed. We have jurisdiction pursuant to 28 U.S.C. § 1291.

STANDARD OF REVIEW

Jury instructions challenged as a misstatement of the law are reviewed de novo. See City of Long Beach v. Standard Oil Co., 46 F.3d 929, 933 (9th Cir. 1995). We review de novo both a dismissal without leave to amend and a dismissal with leave to amend. See, e.g., San Pedro Hotel Co. v. City of Los Angeles, 159 F.3d 470, 477 (9th Cir. 1998); Sameena Inc. v. United States Air Force, 147 F.3d 1148, 1151 (9th Cir. 1998).

ANALYSIS

As the case was filed in federal district court under the Price-Anderson Act ("Price-Anderson" or the "Act"), our decision is guided solely by the substantive law of California. Price-Anderson provides federal jurisdiction over lawsuits for injuries arising out of a "nuclear incident." **1** Under such "public liability actions," **2** the "substantive rules for decision . . . shall be derived from the law of the State in which the nuclear incident involved occurs, unless such law is inconsistent with the provisions of [section 2210]." 42 U.S.C. § 2014(hh).**3**

Enacted in 1957 during the fledgling days of the nuclear power industry, Price-Anderson had a dual purpose: "to pro-

1 A "nuclear incident" includes "any occurrence . . . within the United States causing . . . any sickness, disease, or death. . . ." 42 U.S.C. § 2014(q). It is undisputed that Mrs. Kennedy's death constitutes a "nuclear incident" for purposes of Price-Anderson.

2 "Public liability" is defined as "any legal liability arising out of or

resulting from a nuclear incident." A "public liability action" is "any suit asserting public liability." 42 U.S.C. §§ 2014(w), (hh). It is undisputed that Kennedy's lawsuit is a "public liability action."

3 Cal Edison and Combustion Engineering do not argue that this conclusion is inconsistent with the purposes of Price-Anderson; rather, their argument is based solely on the interpretation of California law.

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protect the public and to encourage the development of the atomic energy industry." 42 U.S.C. § 2012(i); Duke Power Co. v. Carolina Envtl. Study Group, Inc., 438 U.S. 59, 64 (1978). The Act accomplishes this by providing certain federal licensees with a system of private insurance, Government indemnification, and limited liability for certain nuclear tort claims. See El Paso Natural Gas Co. v. Netzsosie, 136 F.3d 610, 616 (9th Cir. 1998), rev'd on other grounds, 526 U.S. 473 (1999); see also S.Rep. No. 218, 100th Cong., 1st Sess. 2 (1987), reprinted in 1988 U.S.C.C.A.N. 1424, 1476, 1477.

Before its amendment in 1988, Price-Anderson provided the federal courts with original and removal jurisdiction only when the accident at issue was "an extraordinary nuclear occurrence" as defined by the Act. See 42 U.S.C. § 2014(j) (defining "extraordinary nuclear occurrence"). Responding to a flurry of lawsuits in federal and state courts generated by the 1979 nuclear accident at Three Mile Island, which was not considered an extraordinary nuclear occurrence, Congress added section 2014(hh) to the Act, thereby providing the federal courts with original and removal jurisdiction for the broader category of "nuclear incidents." See Netzsosie, 526 U.S. at 477.

I. Rutherford Instruction

A. Background and Applicability

The basic contours of California tort law, in the context of medical injuries with multiple possible causes, are outlined in Jones v. Ortho Pharm. Corp., 209 Cal. Rptr. 456 (Ct. App. 1985). Jones involved cancer allegedly induced as a result of taking a contraceptive pill. The California Court of Appeal stated:

The law is well settled that in a personal injury action causation must be proven within a reasonable medical probability based upon competent expert

testimony. Mere possibility alone is insufficient to establish a prima facie case A possible cause only becomes "probable" when, in the absence of other reasonable causal explanations, it becomes more likely than not that the injury was a result of its action. This is the outer limit of inference upon which an issue may be submitted to the jury.

Id. at 460.

The Book of Approved Jury Instructions for California ("BAJI") provides two general instructions on causation for cases involving injuries with multiple potential causes. It was these two instructions -- BAJI 3.76 and 3.77 -- that the district court provided to the jury, neither of which was objected to by any of the parties. BAJI 3.76 provides a definition for "cause": "The law defines cause in its own particular way. A cause of injury, damage, loss or harm is something that is a substantial factor in bringing about an injury, damage, loss or harm." The other standard jury instruction, BAJI 3.77, pertains to multiple causation. It states:

There may be more than one cause of an injury. When conduct of two or more persons or conduct and a defective product contributes concurrently as causes of an injury, the conduct of each is a cause of the injury regardless of the extent to which each contributes to the injury. A cause is concurrent if it was operative at the moment of injury and acted with another cause to produce the injury.

Rutherford addressed the adequacy of these instructions and altered the landscape of California tort law, as it applies to the burden of proof to establish causation for asbestos-induced cancer, when it held that BAJI 3.76 and 3.77 must be augmented by an additional instruction. See 941 P.2d at 1223. Though the court reiterated traditional California tort principles on causation and cited Jones's "reasonable medical prob-

ability" requirement with approval, see id. at 1214, 1219 n.1, it cited four factors in asbestos-related cancer cases that necessitated a departure from the standard jury instructions on causation.

First, the court noted that "there is scientific uncertainty regarding the biological mechanisms by which inhalation of certain microscopic fibers of asbestos leads to lung cancer" Id. at 1218. Second, it discussed the uncertainty that "frequently exists" whether a plaintiff was even exposed to dangerous asbestos fibers produced, distributed or installed by a particular defendant. The court was particularly concerned with the long latency periods of asbestos-related cancers and the many different asbestos-containing products that may have been used at the same time and in the same workplace. See id. Third, the court stated that the "question arises whether the risk of cancer created by . . . exposure to a particular asbestos-containing product was significant enough to be considered a legal cause of the disease." Id. Finally, the court noted the "impossibility" of proving "the unknowable path of a given asbestos fiber." Id. at 1219.

Despite these difficulties of proof, the California Supreme Court rejected the argument that the burden of proving causation should shift to the defendants after the plaintiffs had proven exposure to asbestos-containing products. ⁴ The court reasoned that the fundamental justification for a shifting of the burden -- that without such a shift all defendants might escape liability and the plaintiff be left "remediless" -- is absent in asbestos-related cancer cases. Id. at 1220 (quoting Summers v. Tice, 199 P.2d 1, 4 (Cal. 1948)). Moreover, the court pointed out that in asbestos cases, unlike traditional alternative liability cases, the complete set of possible tortfea-

⁴ At the underlying trial in Rutherford, the plaintiffs had originally requested a burden-shifting instruction based on an alternative liability theory that the California Supreme Court first approved in the celebrated case of Summers v. Tice, 199 P.2d 1 (Cal. 1948).

sors is not before the court, and that given the wide ranging toxicities of different asbestos-containing products, the tortfeasors that are before the court do not display the "same symmetry of comparative fault or indivisible injury" that are the trademarks of alternative liability cases. See id. (internal quotations omitted). Having rejected burden-shifting, the California Supreme Court was presented with a Gordian knot of its own making: traditional causation principles presented asbestos-related cancer patients with insuperable barriers to recovery, yet the court had rejected alternative liability as being unsuited for these types of cases.

Rutherford cut the knot by altering, rather than shifting, the plaintiff's burden. The court held that

plaintiffs may prove causation in asbestos-related cancer cases by demonstrating that the plaintiff's exposure to defendant's asbestos-containing product in reasonable medical probability was a substantial factor in contributing to the aggregate dose of asbestos the plaintiff or decedent inhaled or ingested, and hence to the risk of developing asbestos-related cancer, without the need to demonstrate that fibers from the defendant's particular product were the ones, or among the ones, that actually produced the malignant growth.

Id. at 1219 (footnote omitted).

The burden now established, the court turned to the standard jury instructions, BAJI 3.76 and 3.77, and found them "insufficient for [the] purpose" of ensuring that jurors know the "precise contours" of this newly-crafted burden. See id. Specifically, the court found that BAJI 3.76 and 3.77

say nothing, however, to inform the jury that, in asbestos-related cancer cases, a particular asbestos-containing product is deemed to be a substantial fac-

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tor in bringing about the injury if its contribution to the plaintiff or decedent's risk or probability of developing cancer was substantial.

Without such guidance, a juror might well conclude that the plaintiff needed to prove that fibers from the defendant's product were a substantial factor actually contributing to the development of the plaintiff's or decedent's cancer. In many cases, such a burden will be medically impossible to sustain, even with the greatest possible effort by the plaintiff, because of irreducible uncertainty regarding the cellular formation of an asbestos-related cancer.

Id. at 1219-20.

To rectify these shortcomings of the standard instructions in asbestos-related cancer cases, the court then held that

in addition to BAJI 3.76 and 3.77, the jury must also be instructed that

the plaintiff need not prove that fibers from the defendant's product were the ones, or among the ones, that actually began the process of malignant cellular growth. Instead, the plaintiff may meet the burden of proving that exposure to defendant's product was a substantial factor causing the illness by showing that in reasonable medical probability it was a substantial factor contributing to the plaintiff's or decedent's risk of developing cancer.

Id. at 1203 (emphasis added). It is this passage upon which Kennedy based his repeated requests for a Rutherford instruction.

We must now decide whether Rutherford is applicable to the instant case. We hold that it is.

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We begin by noting that the California Supreme Court has applied Rutherford to claims involving exposure to substances other than asbestos. In Bockrath v. Aldrich Chemical Co., 980 P.2d 398 (Cal. 1999), it applied Rutherford to a cancer claim based on exposure to multiple workplace chemicals. Accordingly, we find nothing in California's jurisprudence that would exclude cases of CML after exposure to radioactive particles from Rutherford's purview.⁵

The more difficult question is whether Rutherford is applicable in single-defendant cases. For the reasons set forth below, we hold that Rutherford does apply to single-defendant hazardous substance cases where the defense of alternative possible causes is raised.

The limited number of cases applying Rutherford have all involved multiple defendants, and appellees argue that this is a necessary requirement for a Rutherford instruction. We disagree. We find little relevant distinction between a Rutherford case with multiple defendants, each of whose products may have been a substantial factor in causing the plaintiff's injury, and a case in which a single defendant argues that the plaintiff cannot show causation because there exist other potential sources that may have been the legal cause of the harm.

In both circumstances, the plaintiff is faced with the same hurdles that the California Supreme Court identified as making proof of causation, absent the Rutherford instruction, nearly impossible. On a scientific level, the uncertainty regarding the biological mechanisms by which asbestos leads to lung cancer, see Rutherford, 941 P.2d at 218, parallel the medical uncertainties surrounding the cause and effect relationship between CML and radiation. And, it is just as impos-

5 Indeed, like asbestos-related cancer, CML also has a long latency period. Additionally, it is impossible to determine that a particular dose of radiation initiated the CML process, just as it is impossible to trace asbestos-related cancer back to a given asbestos fiber.

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sible to prove the course of radiation as it is to prove the "unknowable path of a given asbestos fiber." Id. at 1219.

More importantly, by choosing to raise alternative sources of the injury as a defense, a defendant creates the need for a Rutherford instruction. Just as the presence of multiple defendants in an asbestos-related cancer case raises the question of "whether the risk of cancer created by . . . exposure to a particular asbestos-containing product was significant enough to be considered a legal cause of the disease," id. at 1218, so too does the proffering of alternative causes of CML by a single defendant. In both scenarios a given defendant is making essentially the same argument: the plaintiff cannot prove that his injury came from a specific source (i.e. the defendant), when multiple other potential sources exist, whether they be another asbestos-related defendant or something altogether different, such as cigarette smoking or radiation from the sun in the case of CML.

While the instant case has two defendants, neither argued that the other was an independent source of causation. Their defense raised other possible causes of Mrs. Kennedy's CML, none of which was attributable to either of the defendants. In essence, then, Cal Edison and Combustion Engineering operated as a single defendant with respect to the issue of alternative causes of the injury.

B. Correctness of Proffered Instruction and Obligation of the District Court

Having held that a Rutherford instruction was required, we

now turn to the specific instruction proffered by Kennedy. At oral argument, appellees argued that the requested instruction was not a proper Rutherford instruction. We agree.

On two occasions, Kennedy proposed the following instruction, that was to be inserted between BAJI 3.76 and BAJI 3.77:

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In order to prove that radiation from the nuclear power plant was a substantial factor, Plaintiffs do not need to prove that it actually contributed to the development of Ellen Marie Kennedy's cancer. If exposure to radiation from the nuclear power plant in reasonable medical probability contributed to her risk of developing cancer then such exposure was a substantial factor in causing her cancer.

The proposed instruction leaves out a small, but critical, phrase. It states that radiation from SONGS need only have "contributed" to Mrs. Kennedy's risk of developing cancer. We read Rutherford to require more. Kennedy's burden is not to show that exposure to radiation in reasonable medical probability "contributed" to a risk of cancer. Rather, it is to demonstrate that the exposure in reasonable medical probability was "a substantial factor" in contributing to the risk of cancer. The omission of this modifier is essential to a proper Rutherford instruction.

That the defendant's product must, in reasonable medical probability, be a "substantial factor" in contributing to the risk of cancer was reiterated as necessary to the instruction three times by the Rutherford court. See id. at 1219 (stating that a plaintiff may prove causation by showing that exposure to defendant's asbestos-containing product "in reasonable medical probability was a substantial factor in contributing to the . . . risk of developing asbestos-related cancer") (emphasis added); id. at 1220 ("[T]he jury should be told that the plaintiff's or decedent's exposure to a particular product was a substantial factor in causing or bringing about the disease if in reasonable medical probability it was a substantial factor contributing to plaintiff's or decedent's risk of developing cancer.") (emphasis added); id. at 1223 ("In conclusion . . . the plaintiff may meet the burden of proving that exposure to defendant's product was a substantial factor causing the illness by showing that in reasonable medical probability it was

a substantial factor contributing to the plaintiff's or dece-

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dent's risk of developing cancer. The jury should be so instructed.") (emphasis added).

Our focus on the "substantial factor" language is not mere quibbling over linguistic technicalities. Although "substantial factor" has not been explicitly defined by the California courts, Bockrath, quoting extensively from Rutherford, delineated the broad outlines of the term:

The substantial factor standard is a relatively broad one, requiring only that the contribution of the individual cause be more than negligible or theoretical. Thus, a force which plays only an "infinitesimal" or "theoretical" part in bringing about injury, damage, or loss is not a substantial factor, but a very minor force that does cause harm is a substantial factor

Bockrath, 980 P.2d at 403 (internal citations and quotations omitted). The omission of the "substantial factor" language from Kennedy's requested instruction, therefore, would have enabled the jury to have found that radiation from SONGS was the legal cause (i.e., a substantial factor in bringing about the injury, *see supra* BAJI 3.76), of Mrs. Kennedy's death, even if the radiation played only an "infinitesimal" or "theoretical" part in contributing to her risk of CML. Such a result is inconsistent with Rutherford.

That the proposed instructions were not entirely correct under Rutherford is insufficient to affirm the district court's refusal to instruct the jury properly. Ordinarily, a district court does not err in refusing to give incorrect or misleading instructions. *See, e.g., Mitchell v. Keith*, 752 F.2d 385, 388 (9th Cir. 1985).

A district court, however, may have an obligation to correctly instruct the jury even after being presented with an arguably improper instruction that nonetheless directs its

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attention to an important issue. While this issue has not been expressly decided in this circuit, several of our sister circuits have held that such an obligation does exist. *See Webster v.*

Edward D. Jones & Co., L.P., 197 F.3d 815, 820 (6th Cir. 1999) ("Even if an incorrect proposed instruction is submitted which raises an important issue of law involved in light of proof adduced in the case, it becomes the duty of the trial court to frame a proper instruction on the issue raised"); Wilson v. Maritime Overseas Corp., 150 F.3d 1, 10 (1st Cir. 1997) ("If the request directs the court's attention to a point upon which an instruction to the jury would be helpful, the court's error in failing to charge may not be excused by technical defects in the request.") (quoting 9A Charles A. Wright & Arthur R. Miller, *Federal Practice and Procedure* § 2552 at 395-97 (1995)); Bueno v. City of Donna, 714 F.2d 484, 490 (5th Cir. 1983) ("So long as an inadequate or improper request is sufficient to direct the court's attention to a legal defense, the court is thereby alerted that a proper instruction is required."); Brandes v. Burbank, 613 F.2d 658, 668 (7th Cir. 1980) ("Even though the tendered instruction is not entirely perfect, there are situations where the court is not relieved of its duty to give the substance of the requested instruction where it appears that an instruction on the issue is needful to enable the jury to determine intelligently the question"); Posttape Assocs. v. Eastman Kodak Co., 537 F.2d 751, 757 (3d Cir. 1976) ("[I]f an important issue is timely called to [a trial judge's] attention, he should instruct the jury on that matter."); Chavez v. Sears, Roebuck & Co., 525 F.2d 827, 830 (10th Cir. 1976) ("Since the trial court bears the ultimate responsibility for properly instructing the jury, we agree with those courts that have ruled that where an instruction would be beneficial to the jury's proper determination of the case, the court may not merely refuse a requested instruction, but instead has a duty to frame the instruction properly and give it to the jury."); Emery v. Northern Pac. R. R. Co., 407 F.2d 109, 113 n.3 (8th Cir. 1969) ("If the request directs the court's attention to a point upon which the jury has not been charged

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but upon which an instruction would be helpful, the court's error in failing to charge may not be excused by technical defects in a request to charge.") (internal quotation omitted).

In Urisch v. da Rosa, 328 F.2d 794, 797 (9th Cir. 1964), we held that a district court "was under no obligation to redraw" an incorrect, yet otherwise applicable jury instruction for the requesting party. The holding of Urisch was limited by its circumstances. We specifically noted that the requested instruction concerned an "old rule," the doctrine of *res ipsa loquitur*,

and that we "expect[ed] counsel to be aware of it and to frame proper instructions" Id. n.1. The instant case, however, presents a much different scenario. Kennedy requested an instruction based on a "new rule" of state law, one that was only a few months old and had yet to be interpreted or applied by any other court.

Moreover, in a case subsequent to Urisch, we implicitly recognized that a trial court may have the obligation to correct improperly requested jury instructions. In Washington State Bowling Proprietors Ass'n v. Pacific Lanes, Inc., 356 F.2d 371, 376-77 (9th Cir. 1966), we stated that "we do not suggest a trial court is under no obligation to charge on a material issue after requested to do so, even if the instructions as proposed are faulty" ⁶

Today we make explicit what Pacific Lanes suggested, and align this circuit with the majority of our sister circuits. We hold that when the district court is presented with an applicable instruction that raises an important issue of law or directs the court's attention to a point upon which an instruction to the jury would be important, it is not relieved from the

⁶ Our decision to uphold the district court's refusal to give the proffered instructions was based on the fact that the appellants had failed to resubmit the instructions after the trial judge pointed out the errors, and that the evidence did not support the contention that the requested instruction was on a material issue. See Pacific Lanes, 356 F.2d at 377.

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responsibility of giving a proper instruction simply because the party making the request has proposed an instruction that does not completely comply with the relevant law. ⁷

C. Harmless Error Analysis

Harmless-error review applies to jury instructions in a civil case. See, e.g., Caballero v. City of Concord, 956 F.2d 204, 206 (9th Cir. 1992) ("An error in instructing the jury in a civil case requires reversal unless the error is more probably than not harmless."). This review is "less stringent" than review for harmless error in a criminal case, but "more stringent" than review for sufficiency of the evidence. See id. at 207; City of Long Beach, 46 F.3d at 933 (citing Caballero). In review of civil jury instructions for harmless error, unlike review under sufficiency of the evidence, the "prevailing

party is not entitled to have disputed factual issues resolved in his favor because the jury's verdict may have resulted from a misapprehension of the law rather than from factual determinations in favor of the prevailing party." Caballero, 956 F.2d at 207 (emphasis added).

We hold the district court's failure to give a proper Rutherford instruction was not harmless error. "An error in a trial court's jury instructions relating to the parties' respective burdens of proof ordinarily [requires] reversal." Larez v. Halcomb, 16 F.3d 1513, 1518 (9th Cir. 1994). But see Mockler v. Multnomah County, 140 F.3d 808, 812-814 (9th Cir. 1998) (improper instruction on plaintiff's burden of proof held harmless when evidence would support verdict for plaintiff in any event).

Appellees argue that Kennedy failed to establish that any

7 This obligation of the district court in no way relieves the parties of the responsibility to craft a reasonable instruction that is a good-faith attempt to comply with the law. Kennedy made such an attempt, especially considering that Rutherford was such a recent decision.

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type of radiation -- and not just radiation from SONGS -- actually caused Mrs. Kennedy's CML. This argument is based on the contention that the testimony of Kennedy's expert -- that more than 90% of CML cases are caused by radiation -- was a personal belief that was unsupportable and contrary to the consensus view of the scientific community.

Cal Edison and Combustion Engineering, however, did not contest the admission of this testimony under the Federal Rules of Evidence, nor did they present a challenge to the testimony under Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993). Because the jury was not presented with any special verdicts or interrogatories, there is no way of knowing the grounds upon which it based its decision. The harmless error analysis does not entitle appellees to have disputed factual issues resolved in their favor. The possibility exists, therefore, that the jury could have found the expert testimony credible, yet still found for the appellees on the basis of the erroneous causation instructions. Accordingly, the failure to give a Rutherford instruction cannot be harmless error.

Alternatively, Cal Edison and Combustion Engineering

argue that even if a Rutherford instruction were given, Kennedy failed to produce enough evidence proving that radiation from SONGS was a substantial factor in contributing to Mrs. Kennedy's risk of CML. In particular, Cal Edison and Combustion Engineering correctly note that their experts provided uncontradicted testimony that, even if Mrs. Kennedy was exposed to radiation from SONGS, there was only a one in one hundred thousand chance that this radiation caused her CML. The failure to give the Rutherford instruction, they argue, was therefore harmless error.

Under the jury instructions as given, in order to sustain their burden of proof Kennedy needed to have proven by a preponderance of the evidence that the radiation from SONGS was a "substantial factor" in causing Mrs. Kennedy's CML. In Rutherford, the California Supreme Court cautioned that

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"[u]ndue emphasis should not be placed on the term 'substantial.' " Rutherford, 941 P.2d at 1214. As discussed above, this standard only requires that the contribution of the individual cause be more than negligible or theoretical. See id. at 1219.

Under a preponderance of the evidence standard, the jury is only required to believe that "the existence of a fact is more probable than its nonexistence." Concrete Pipes and Prods. of Cal., Inc. v. Construction Laborers Pension Trust for So. Cal., 508 U.S. 602, 622 (1993). Therefore, all the jury need have concluded, if given a Rutherford instruction, was that it was more probable than not that there was more than a negligible probability that Mrs. Kennedy's cancer was caused by radiation from SONGS. We believe the jury could have reasonably so found.

It would not be unreasonable for a juror to conclude that a one in one hundred thousand chance of developing a fatal cancer was more than a mere theoretical possibility. Presented perhaps more concretely, if the entire U.S. population were exposed to the amount of radiation in appellee's hypothetical upon which its expert based his statistical opinion, then approximately 2,500 people would contract CML. While this number is relatively small, it is more than "negligible."⁸

⁸ While our decision does not rely on such factors, we note that studies have shown that the public maintains a generalized fear of nuclear accidents and that rational individuals may be more likely to overestimate,

even in the face of concrete statistics, the likelihood of harm from a nuclear facility. See Cass Sunstein, Social Norms, Social Meaning, and the Economic Analysis of Law, 27 J. Legal Stud. 799, 803 (1998) (citing studies (1) showing that the public ranks radiation from a nuclear accident as the fourth most serious risk it faces, while experts do not consider such an event likely enough to rank it; and (2) suggesting that low-probability, high-danger risks, such as those from nuclear power plants, might be treated as worse than their "actuarial value"). Because such over-estimation, as the literature suggests, is not necessarily irrational (even though it may be mathematically incorrect), rational jurors could have reasonably concluded that the seemingly low probability of Mrs. Kennedy contracting CML was still "substantial" under California law.

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II. Products Liability Claims

Under California products liability law, "a manufacturer may be held strictly liable in tort for placing a defective product on the market if that product causes personal injury, provided that the injury resulted from a use of the product that was reasonably foreseeable by the defendants. This doctrine of strict liability extends to products which have design defects, manufacturing defects, or warning defects." Sparks v. Owens-Illinois, Inc., 38 Cal. Rptr.2d 739, 745 (Ct. App. 1995) (internal quotation and citation omitted). "Manufacturers of defective products are liable for injuries not only to the purchaser or user of such products, but to injured bystanders as well" Barrett v. Superior Court, 272 Cal. Rptr. 304, 309 (Ct. App. 1990).

We first note that strict liability can be consistent with Price-Anderson. It is relatively well-settled that federal regulations provide the sole measure of a defendant's duty under Price-Anderson. See, e.g., Roberts v. Florida Power & Light Co., 146 F.3d 1305, 1308 (11th Cir. 1998) (citing cases from the Seventh, Sixth, and Third Circuits). This is because the "states are precluded from regulating the safety aspects of nuclear power," Silkwood v. Kerr-McGee, Inc., 464 U.S. 238, 240-241 (1984), as such safety is "the exclusive business of the federal government." Pacific Gas & Elec. Co. v. State Energy Resources Conservation & Dev. Comm'n, 461 U.S. 190, 208 (1983).

Strict liability would only be inconsistent with Price-Anderson, then, if a specific claim would enable a plaintiff to recover from a defendant in a public liability action under the

Act without first establishing that the defendant breached a federally imposed duty of care. See Roberts, 146 F.3d at 1308 (affirming district court dismissal of strict liability and negligence claims on grounds that plaintiffs did not allege that defendant exposed them to radiation in excess of the maximum allowable by federal regulations).

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More importantly, the Supreme Court itself has contemplated strict liability actions under Price-Anderson. In Silkwood, 464 U.S. at 256, the Court noted the tension between "the conclusion that safety regulation is the exclusive concern of the federal law and the conclusion that a state may nevertheless award damages based on its own law of liability." The Court found, however, that "Congress intended to stand by both concepts and to tolerate whatever tension there was between them." Id. The Court concluded that "[i]t may be that the award of damages based on the state law of negligence or strict liability is regulatory in the sense that a nuclear plant will be threatened with damages liability if it does not conform to state standards, but that regulatory consequence was something that Congress was quite willing to accept." Id. (emphasis added).

Finding the application of strict products liability consistent with Price-Anderson, we consider the merits of the plaintiffs' claims. As we noted in our discussion of their claims against SONGS, the plaintiffs have presented evidence that Mrs. Kennedy's cancer was caused by exposure to radioactive "fuel fleas" released from Combustion Engineering's apparently defective fuel rods and carried home on her husband's clothing. Despite this showing, Combustion Engineering argues that it was entitled to summary judgment on strict liability because it never marketed the fuel rods to the public, and because it could not have foreseen that the rods would injure a nonemployee of SONGS like Mrs. Kennedy.

California imposes strict products liability only for injuries caused by defective products that a manufacturer or distributor "places on the market." Greenman v. Yuba Power Prods., Inc., 377 P.2d 897, 900 (Cal. 1963) (en banc) (Traynor, J.). To place a product on the market is to "play an integral role in the 'producing and marketing enterprise' of a defective product and [to] profit from placing the product into the stream of commerce." Bay Summit Community Ass'n v. Shell Oil Co., 59 Cal. Rptr. 2d 322, 328 (Ct. App. 1996); see Price

v. Shell Oil Co., 466 P.2d 722, 727-28 (Cal. 1970); Mancuso v. Southern Cal. Edison Co., 283 Cal. Rptr. 300, 305 (Ct. App. 1991) ("Placing an article on the market under the Greenman test is the functional equivalent of putting a product in the stream of commerce" (quotations omitted)).

California has recognized three exceptions to this broad rule. First, a party that plays only a minimal role in the manufacture or distribution of a defective product is not deemed to have placed the product on the market. See Bay Summit, 59 Cal. Rptr. 2d at 330. Second, a product is not placed on the market when it does not enter the stream of commerce by means of a commercially significant market transaction. See Mancuso, 283 Cal. Rptr. at 308. And third, a party does not place a product on the market by disposing of it in a unique or isolated transaction. See Price, 466 P.2d at 728.

Though only the last exception arguably applies here, the thread that binds all three together is the "paramount policy" of strict products liability: "the protection of otherwise defenseless victims of manufacturing defects and the spreading throughout society of the cost of compensating them." Price, 466 P.2d at 725-26; see Carlin v. Superior Court, 920 P.2d 1347 (Cal. 1996); Greenman, 377 P.2d at 901. In the case of isolated trafficking in defective goods, the loss-spreading rationale that underlies strict products liability simply does not apply. See Vaerst v. Tanzman, 272 Cal. Rptr. 503, 505-06 (Ct. App. 1990); see also Galindo v. Precision American Corp., 754 F.2d 1212, 1218-19 (5th Cir. 1985) ("It is clear that the rationale for imposition of strict liability is served only if the defendant is in the business of releasing products into the stream of commerce."); Restatement (Second) of Torts § 402A, cmt. f (1965) ("The basis [of strict liability] is lacking in the case of the ordinary individual who makes the isolated sale.").

The market for Combustion Engineering's products does appear to be narrow, and the consumers of its products

few and sophisticated. But no California court has found the loss-spreading rationale of strict products liability inapplicable to the sale of products into a limited market by a firm that is in the business of doing so. California has imposed strict

liability on defendants that dealt in defective goods on only a few occasions, see Fakhoury v. Magner, 101 Cal. Rptr. 473, 476 (Ct. App. 1972) (landlord who leased five furnished apartments strictly liable for defective furniture); Rawlings v. D.M. Oliver, Inc., 159 Cal. Rptr. 119, 122 (Ct. App. 1979) (manufacturer that produced nine specially-ordered kelp-drying machines strictly liable for defects).

The Restatement gives as examples of isolated transactions exempted from strict liability "the housewife who, on one occasion, sells to her neighbor a jar of jam," or "the owner of an automobile who, on one occasion, sells it to his neighbor, or even sells it to a dealer in used cars" Restatement § 402A, cmt. f. California has applied the exception in the case of a landlord who leased his own residence on a single occasion, see Vaerst, 272 Cal. Rptr. at 505-06; a one time seller of used manufacturing equipment, see Ortiz v. HPM Corp., 285 Cal. Rptr. 728, 733 (Ct. App. 1991); and a builder that constructed only two residential homes. See Oliver v. Superior Court, 259 Cal. Rptr. 160, 161-62 (Ct. App. 1989).

The record suggests that Combustion Engineering has supplied thousands of fuel rods on a continuing basis to SONGS and several other nuclear plants. Combustion Engineering's enterprise differs entirely in both quality and degree from the ad hoc and infrequent activities to which the isolated transaction exception has been previously deemed applicable. The loss spreading rationale of strict products liability applies to this enterprise with full force. For purposes of strict liability, we conclude that Combustion Engineering has placed its fuel rods on the market.

The "market for which [a product] is produced" also "bears directly upon the issue of foreseeability" of the plaintiff's

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injury. Dosier v. Wilcox & Crittendon Co., 119 Cal. Rptr. 135, 137 (Ct. App. 1975) ("`The intended marketing scheme is one basis for deciding which users can be foreseen.'" (quoting Helene Curtis Indus. v. Pruitt, 385 F.2d 841, 860 (5th Cir. 1967))). Yet California has not restricted the class of foreseeable plaintiffs to immediate consumers to whom defective products are directly marketed. Rather, California holds "[m]anufacturers of defective products . . . liable for injuries not only to the purchaser or user of such products, but to injured bystanders as well." Barrett v. Superior Ct., 272 Cal.

Rptr. 304, 309 (Ct. App. 1990). "[A]n injury to a bystander is often a perfectly foreseeable risk of the maker's enterprise, and the considerations for imposing such risks on the maker without regard to his fault do not stop with those who undertake to use the chattel." Elmore v. American Motors Corp., 451 P.2d 84, 89 (Cal. 1969) (quotations omitted).

In Elmore, the California Supreme Court found that a defective automobile "constitutes a substantial hazard on the highway not only to the driver and passenger of the car but also to pedestrians and other drivers." Id.

The public policy which protects the driver and passenger of the car should also protect the bystander, and where a driver or passenger of another car is injured due to defects in the manufacture of an automobile and without any fault of their own, they may recover from the manufacturer of the defective automobile.

Id. Since Elmore, California courts have recognized as foreseeable bystanders, employees injured by defective equipment owned or leased by their employers, see Barker v. Lull Eng'g Co., 573 P.2d 443, 457 (Cal. 1978); Pike v. Frank G. Hough Co., 467 P.2d 229, 235 (Cal. 1970); Barrett, 272 Cal. Rptr. at 309-10; independent contractors working alongside such employees, see Johnson v. Standard Brands Paint Co., 79 Cal. Rptr. 194, 197-98 (Ct. App. 1969); a neighbor of a home-

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owner in whose garage a water heater had been defectively installed, see Hyman v. Gordon, 111 Cal. Rptr. 262, 264-65 (Ct. App. 1973); an onlooker blinded by debris kicked up by a lawnmower, see Foglio v. Western Auto Supply, 128 Cal. Rptr. 545 (Ct. App. 1976); and a parking lot attendant struck by a customer's rolling car. See Preissman v. Ford Motor Co., 82 Cal. Rptr. 108, 113 (Ct. App. 1970).

These examples are not exhaustive of the circumstances in which injury to a bystander by a defective product may be foreseeable. "[T]he question of foreseeability of injury is an issue for the trier of fact" to be considered on the particular facts of each case. Johnson, 79 Cal. Rptr. at 198; see also Dossier, 119 Cal. Rptr. at 137. It is therefore unavailing to distinguish cases imposing strict liability for defective products sold to employers as having involved injuries to employees,

and not employees' family members. California strict liability turns on actual foreseeability of injury to the plaintiff in the circumstances of a particular case, and not on categorical distinctions among bystanders based on their relationship to the immediate consumer of the defective product. See Johnson, 79 Cal. Rptr. at 198 ("Under the strict liability tort theory, where notions of privity have no part, the bystander could probably recover if injury to him was foreseeable under generally applicable tests." (quotations omitted)); see also Elmore, 451 P.2d at 88-89 (foreseeability of bystanders is not restricted by privity of contract with seller of defective goods); Greenman, 377 P.2d at 900 (same).

On the facts of this case, it is perfectly reasonable to conclude that the spouse of a nuclear-plant worker might fall within the foreseeable zone of danger posed by Combustion Engineering's products. There was evidence that due to defects in manufacture, over one hundred Combustion Engineering fuel rods used in the SONGS 3 reactor tended to rupture and disintegrate when brought up to power, releasing microscopic bits of radioactive matter. A SONGS site management memorandum suggests that particular features of

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these "fuel fleas" made them especially prone to being transported off-site on skin and clothing:

Since they are tiny (normally invisible to the naked eye) dry particles, they do not cling to most surfaces as tenaciously as normal contamination and can be carried short distances on surfaces and then dropped. This intensifies contamination spread problems.

Whether a defect that releases such particles poses a foreseeable risk to family members of workers who are exposed to them is at least a question of fact on which reasonable people may differ, and thus should have been presented to the jury. It was error for the district court to decide the question as a matter of law.

III. Suggestions on Remand

As we noted, the jury was not presented with special verdicts or interrogatories, creating difficulties on appellate review. Had we known the basis upon which the jury made its determination -- either that Kennedy had not proven expo-

sure to radiation from SONGS, or that such exposure, though proven, was not the legal cause of Mrs. Kennedy's death -- our disposition of the case would have been greatly facilitated.

While we are not prescribing a set of jury instructions, we highlight that proof of exposure is a predicate requirement of Rutherford. Proof of exposure was not at issue in Rutherford, as the case was conducted in a bifurcated trial. Nonetheless, the California Supreme Court made clear that exposure to the allegedly harmful substance must be proven. First, the court noted that in only one instance -- where hundreds of manufacturers had made the same drug using an identical formula -- have toxic tort plaintiffs been relieved of the burden of proving exposure. See 941 P.2d at 976.

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More importantly, the court explicitly indicated that proof of exposure was still a part of a plaintiff's burden under the newly-established rule. At the end of its discussion on the causation issue, the court reiterated the requirements of a Rutherford instruction:

In conclusion, our general holding is as follows. In the context of a cause of action for asbestos-related injuries, the plaintiff must first establish some threshold exposure to the defendant's asbestos-containing products

Id. at 982 (emphasis added). Given the language of Rutherford and the inherent difficulties in a general verdict for situations like the instant case, the district court, on remand, may want to consider presenting the jury with a form of verdict that will allow a reviewing court, as well as the parties, to be assured that the requirements of Rutherford have been met.

The decision of the district court is REVERSED, and the case is REMANDED for a new trial consistent with this opinion.

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